

# NASA TECH BRIEF

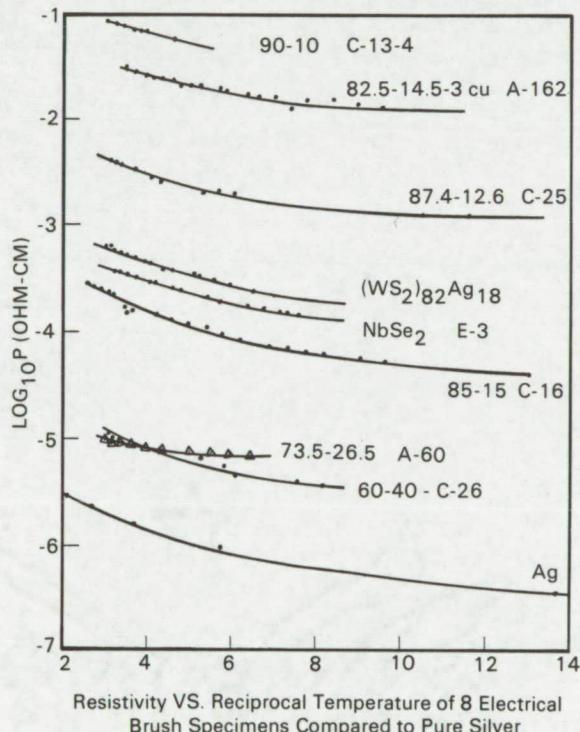
## Marshall Space Flight Center



NASA Tech Briefs announce new technology derived from the U.S. space program. They are issued to encourage commercial application. Tech Briefs are available on a subscription basis from the National Technical Information Service, Springfield, Virginia 22151. Requests for individual copies or questions relating to the Tech Brief program may be directed to the Technology Utilization Office, NASA, Code KT, Washington, D.C. 20546.

### Resistivity and Hall Measurements of Thermoelectric Materials

Resistivity and Hall measurements were made on eight semiconductor specimens being developed for possible use as electrical brushes. Standard Hall instrumentation was assembled and overall system



Resistivity VS. Reciprocal Temperature of 8 Electrical Brush Specimens Compared to Pure Silver

calibration was achieved using a specimen with known properties.

The results of the resistivity measurement, shown in the figure, indicate metallic conduction, i.e., an increase of resistivity with increasing temperature. The

resistivity of pure silver is shown for comparative purposes. A general conclusion drawn from the experimental data indicates that, when the silver content in the molybdenum disulfide is reduced, the resistivity increases. Noted exceptions, although not fully explainable, might have been caused by heat treatments in the prior fabrication process.

This instrumentation setup can be used for measuring resistivity values between  $3 \times 10^{-6}$  and  $10^5$  ohm-cm and Hall values between 0.2 and  $10^{10}$  cm<sup>3</sup>/coulomb, with an absolute error of less than 5 percent.

An elementary review of the Hall theory is presented with the calibration data.

#### Note:

The following documentation may be obtained from:

National Technical Information Service  
Springfield, Virginia 22151  
Single document price \$3.00  
(or microfiche \$0.95)

#### Reference:

NASA-TM-X-53763 (N68-33020), Determination of Resistivity and Hall Coefficient of Semiconducting Materials Between 80°K and 375°K

#### Patent status:

No patent action is contemplated by NASA.

Source: R.D. Ruff  
Marshall Space Flight Center  
(MFS-20470)

Category 03

# 2019 FESTIVAL

## OF THE AMERICAN SONG

Music is born of the heart, and the heart is the source of all that is good and true. The Festival of the American Song is a unique and special way to honor the heart and the soul of our country. It is a celebration of the music that has shaped our nation, and the people who have created it.

### THE 2019 FESTIVAL OF THE AMERICAN SONG

The 2019 Festival of the American Song is a week-long event that will take place in Washington, D.C. The festival will feature performances by some of the most talented musicians in the country, including Bruce Springsteen, Bob Dylan, and Bruce Hornsby. The festival will also include a variety of other events, such as panel discussions, book signings, and a special screening of the movie "The American Song."

The festival will be held at the National Mall, and will feature performances by some of the most talented musicians in the country, including Bruce Springsteen, Bob Dylan, and Bruce Hornsby. The festival will also include a variety of other events, such as panel discussions, book signings, and a special screening of the movie "The American Song."

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